



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:

Shlomo Ruschin

Serial No.: 09/825,831

Filed: April 5, 2001

**For:** Headset Based on Optical Transmission and Cellular Communications System Employing such a Headset

Examiner: Raymond S. Dean

Group Art Unit: 2684

Attorney  
Docket: 1371/4

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

## RESPONSE

Sir:

This is in response to the United States Patent and Trademark Office Action mailed December 19, 2003, which response is being made on or before April 19, 2004, and for which \$55 extension fees are due.

Please amend the above-referenced application as detailed in the following pages.

AMENDMENTS TO THE CLAIMS

**The following is a complete listing of the claims indicating the current status of each claim and including amendments currently entered as highlighted.**

1. (currently amended) A cellular communications system for use by a user to communicate via a cellular communications network, the system comprising:

- (a) a cellular communications unit for two-way communication with the cellular communications network;
- (b) a headpiece including at least one earphone and a microphone, and
- (c) a bi-directional optical communications link associated with said cellular communications unit and said headpiece and configured to provide a communications link between said cellular communications unit and said headpiece such that said earphone produces an audio output corresponding to data received by the cellular communications unit and said cellular communications unit transmits data corresponding to an audio input received by said microphone, said bi-directional optical communications link including at least one optic fiber deployed between said cellular communications unit and said headpiece.

2. (original) The cellular communications system of claim 1, wherein said bi-directional optical communications link is the sole communications link between said cellular communications unit and said headpiece.

3. (canceled)

4. (currently amended) The cellular communications system of claim-3  
1, wherein said at least one optic fiber is implemented as two optic fibers.

5. (currently amended) The cellular communications system of claim-3  
1, wherein said at least one optic fiber is implemented as a sole optic fiber.

6. (currently amended) The cellular communications system of claim-3  
1, wherein said at least one optic fiber is implemented as at least one plastic optic  
fiber.

7. (original) The cellular communications system of claim 1,  
wherein said headpiece further includes at least one battery.

8. (original) The cellular communications system of claim 1,  
wherein said bi-directional optical communications link is configured to transfer  
power from said cellular communications unit to said headpiece for powering at least  
one electronic component within said headpiece.

9. (original) A headset for use with a cellular communications unit  
for bi-directional communication with a cellular communications network, the cellular  
communications unit having an electrical output for providing an audio-out signal  
corresponding to data received from the cellular communications network and an  
electrical input for receiving an audio-in signal for transmission via the cellular  
communications network, the headset comprising:

- (a) an electro-optic interface unit for connection to the cellular  
communications unit, said interface unit including:

- (i) an interface-unit optical modulator configured for receiving said audio-out signal from the cellular communications unit and generating a corresponding first optical signal, and
  - (ii) an interface-unit optical receiver responsive to a received optical signal to generate a corresponding electrical audio-in signal to be provided to the electrical input of the cellular communications unit;
- (b) a headpiece including:
- (i) a headpiece optical receiver responsive to a received optical signal to generate a corresponding electrical driver signal,
  - (ii) at least one earphone electrically connected so as to be driven by said driver signal to generate an audible sound,
  - (iii) a microphone for generating an electrical microphone signal corresponding to sensed audible sounds, and
  - (iv) a headpiece optical modulator responsive to said microphone signal to generate a corresponding second optical signal; and
  - (v) an optic fiber connection including at least one optic fiber, said optic fiber connection being associated with said electro-optic interface unit and said headpiece and being configured to form an optical link between said interface-unit optical modulator and said headpiece optical receiver, and between said headpiece optical modulator and said interface-unit optical receiver.

10. (original) The headset of claim 9, wherein said optic fiber connection employs a single optic fiber to provide said optical link both between said interface-unit optical modulator and said headpiece optical receiver, and between said headpiece optical modulator and said interface-unit optical receiver.

11. (original) The headset of claim 9, wherein said optic fiber connection employs a first optic fiber to provide said optical link between said interface-unit optical modulator and said headpiece optical receiver, and a second optic fiber to provide said optical link between said headpiece optical modulator and said interface-unit optical receiver.

12. (original) The headset of claim 9, wherein said at least one optic fiber is implemented as at least one plastic optic fiber.

13. (original) The headset of claim 9, wherein said headpiece further includes at least one battery for powering said headpiece optical receiver and said headpiece optical modulator.

14. (original) The headset of claim 9, further comprising an optical power transmission system configured to transfer power via said optical fiber connection to said headpiece for powering said headpiece optical receiver and said headpiece optical modulator.

15. (original) The headset of claim 9, wherein said headset is substantially electrically insulated from said interface unit.

16. (new) A cellular communications system for use by a user to communicate via a cellular communications network, the system comprising:

(a) a cellular communications unit for two-way communication with the cellular communications network;

(b) a headpiece including at least one earphone and a microphone, and

(c) a bi-directional optical communications link associated with said cellular communications unit and said headpiece and configured to provide a communications link between said cellular communications unit and said headpiece such that said earphone produces an audio output corresponding to data received by the cellular communications unit and said cellular communications unit transmits data corresponding to an audio input received by said microphone,

wherein said bi-directional optical communications link is configured to transfer power from said cellular communications unit to said headpiece for powering at least one electronic component within said headpiece.

**REMARKS**

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-15 are in this case. Claims 1-7, 9-13 and 15 have been rejected under § 102(e) or § 103(a). Claims 8 and 14 have been objected to. Independent claim 1 and dependent claims 4-6 have been amended. Claim 3 has been canceled. New independent claim 16 has been added.

**§ 102(e) Rejections**

The Examiner has rejected claims 1, 2 and 7 under § 102(e) as being anticipated by Johansson (US 5913163). The Examiner's rejections are respectfully traversed.

While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend independent claim 1 to include the limitations of now canceled claim 3. Dependent claims 4-6 have been amended to depend from amended claim 1.

The Applicant submits that the amendment of the claims renders moot the Examiner's rejections under § 102(e). The § 103(a) rejection of claim 3 will be discussed separately below.

**§ 103 Rejections**

The Examiner has rejected claims 3, 5, 9, 10, 13 and 15 under § 103(a) as being unpatentable over Johansson (US 5913163) in view of Charlier et al. (US 6577877). The Examiner has also rejected claims 4, 6, 11 and 12 under § 103(a) as being unpatentable over Johansson in view of Charlier et al. and further in view of Lefevre et al. (US 5821530). The Examiner's rejections are respectfully traversed.

Referring initially specifically to claim 3, now corresponding to the scope of amended independent claim 1, and independent claim 9, Johansson discloses an integrated local communication system for integrating functionality of both cellular and conventional telephone systems. A major portion of the disclosure of Johansson emphasizes the improved functionality provided to "at least one wireless headset" by combining the freedom of motion of a wireless headset with the dual functionality of cellular and PSTN connectivity. See for example the Background in col. 2 lines 1-53, the Summary from col. 3 line 64 through col. 4 line 1, the Detailed Description in col. 6 lines 43-47, and in claims 2 and 6.

Charlier et al. discloses an optical link between a communications device and a peripheral device (not an audio interface) via an optical fiber.

The Examiner has stated: "*Since both Johansson and Charlier teach a hands-free peripheral that communicates with the cellular communications unit via a bi-directional optical link it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference an[d] use the fiber optic cable taught in Charlier as an alternative means for providing the bi-directional optical link between the headset and the cellular communications unit in Johansson such that the user could operate hands-free.*"

The MPEP in Section 706.02(j) sets out the criteria for 35 USC § 103(a). Specifically, the MPEP states:

**To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the**



**claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.**

With regard to the requirement of "Suggestion or Motivation To Modify the References", section 2143.01 of the MPEP states as follows: **If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.** *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In the present case, the Applicant wishes to point out that the untethered mobility of the headset of Johansson is clearly essential to the intended purpose of the system described. By way of illustration, Figure 10 of Johansson and the accompanying description in col. 10 lines 24-47 set out the decision making process during receipt of a call where the user selects at decision block **1010** to receive a call at any one of the mobile station (e.g. cellular phone) at step **1015**, the wireless headset at step **1017** or a conventional corded handset at step **1016**. According to the modification of Johansson proposed by the Examiner, the headset would become tethered by an optic fiber cord to the mobile station, thereby effectively reducing the three-way functionality and associated system modularity to a two-way only functionality.

In contrast, the present invention addresses an entirely different problem of how to protect the user of a corded headset from undesired radio frequency electromagnetic radiation which may be transmitted along the electric wires. This problem is addressed by replacing the conventional conductive wire cord with an optic fiber cord. Such an arrangement is not fairly taught or suggested by the combination of references cited by the Examiner.

In view of these arguments, the Applicant respectfully submits that claim 3, now corresponding to amended independent claim 1, and independent claim 9 as filed, should be found allowable over the art of record. Reconsideration is respectfully requested.

Objections


The Examiner has objected to claims 8 and 14 as being based on rejected base claims. The Examiner has noted that these claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

According to the Examiner's suggestion, and in order to avoid unnecessary limiting of claim 8 by the amendment presented above, the Applicant submits herewith new independent claim 16 corresponding to the scope of original objected claim 8.

Claim 8 itself depends from amended claim 1 which is now believed to be allowable as detailed above.

In view of the above amendments and remarks it is respectfully submitted that independent claims 1, 9 and 16, and hence also dependent claims 2, 4-8 and 10-15, are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

  
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Date: April 18, 2004